MITSUBISHI HEAVY INDUSTRIES, LTD.

Our Technologies, Your Tomorrow

Hyper Inverter

High Performance Air-Conditioning

FDU/M series

Inverter Ducted Air Conditioners

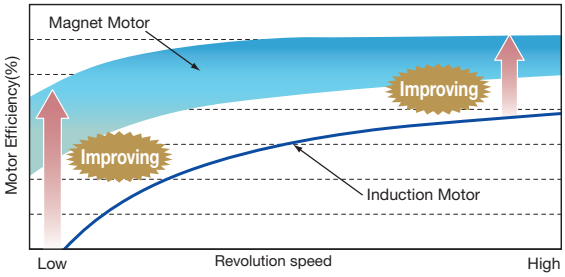
Mitsubishi Heavy Industries Technology

Quick Control & High Efficiency

DC PAM inverter

An inverter system has a number of advantages over a constant speed system. It's variable speed compressor outputs can ensure quick cooling or heating after start up and attains a set temperature more quickly. The air conditioner can slow down the compressor speed to save energy whilst keeping comfortable conditions. The compressor is DC motor driven so it provides higher performance.

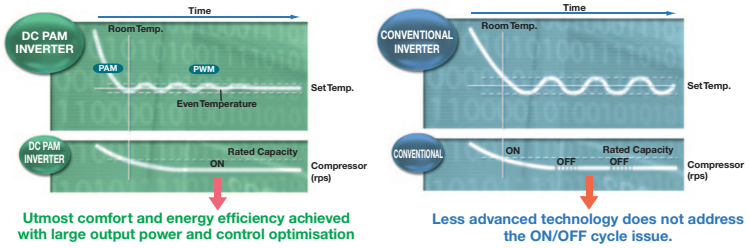
DC compressor motor



New Inverter Control (Vector control)

New Inverter Control has been applied. The new technology of Vector control enables:-

- Smooth operation from low to high speed
- Smooth Sine Voltage Wave form is achieved
- Energy efficiency has improved in low speed range



Utmost comfort and energy efficiency achieved with large output power and control optimisation

Less advanced technology does not address the ON/OFF cycle issue.

Wired remote control with weekly timer (option)

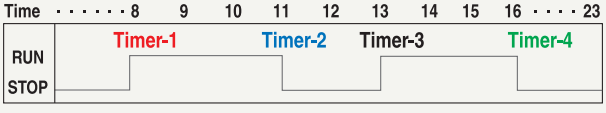
RC-E4

The RC-E4 controller enables extensive access to service and maintenance technical data combined with easy to use functions and a clear LCD display.

Weekly timer function as standard

RC-E4 provides (as a standard feature) a weekly timer, which allows one-week operation schedules to be registered. A user can specify up to four times a day to start/stop the air conditioner. (Temperature setting is also possible with the timer).

Timer operation

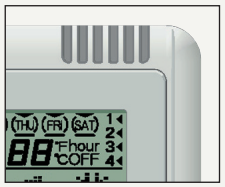


Run hour meters to facilitate maintenance checking

RC-E4 stores operation data when an anomaly occurs and indicates the error on the LCD. It also displays cumulative operation hours of the air conditioner and compressor since commissioning.

Room temperature controlled by the remote control sensor

The temperature sensor is housed in the top section of the remote control unit. This arrangement has improved the sensitivity of the remote control unit's sensor, which permits more finely controlled air conditioning.



Changeable set temperature ranges

RC-E4 allows the upper and lower limits of a set temperature range to be specified separately.
By adjusting a set temperature range, you can ensure energy saving air conditioning by avoiding excessive cooling or heating.

	Changeable range
Upper limit	20~30C(effective for heating operation)
Lower limit	18~26C(effective for non-heating operation)

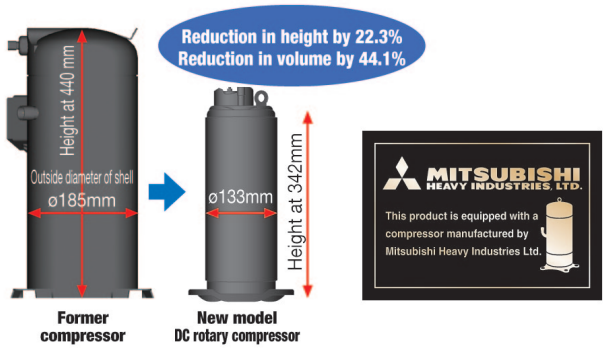
Because of our policy of continuous improvement, we reserve the right to make changes in all specifications without notice. E&OE.

High performance and energy efficiency are achieved at the same time by an increase in the heat exchanger capacity and by using DC fan motors.

Compact design

Size reduction and high efficiency performance of the DC twin rotary compressor

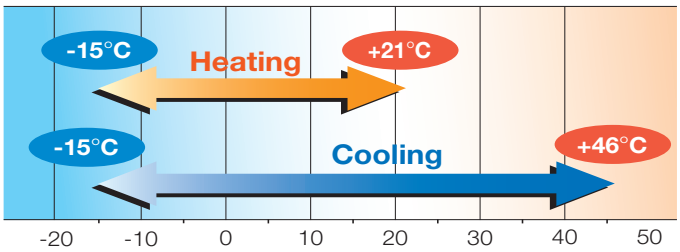
The DC twin rotary compressor can operate at speeds as high as 120 rps to achieve the required capacity. Vector control has provided the optimum compressor control. Starting current has improved significantly and vibration has been reduced.


Reduction in height by 22.3%
Reduction in volume by 44.1%
Height at 440 mm
Outside diameter of shell
ø185mm
ø133mm
Height at 342mm
Former compressor
New model DC rotary compressor
MITSUBISHI HEAVY INDUSTRIES, LTD.
This product is equipped with a compressor manufactured by Mitsubishi Heavy Industries Ltd.

Wide Operation Range

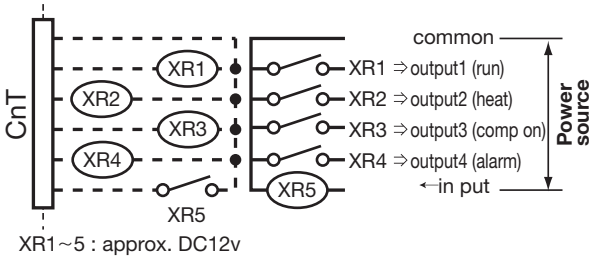
Heating and cooling operations are possible at an outdoor temperature as low as –15°C.

Our new advanced technology has improved the heating and cooling operation range.
Units can be installed when heating or cooling operation is required at low ambient conditions down to -15°C.



CnT terminal

A dry contact is fitted to each indoor unit which is used when a signal output is required. The CNT simplifies connection to home automation systems.



XR1~5 : approx. DC12v

New Hyper Inverter outdoor units

5.0 & 6.0kW

7.1kW

10.0kW

12.5 & 14.0kW

FDU Series

HyperInverter

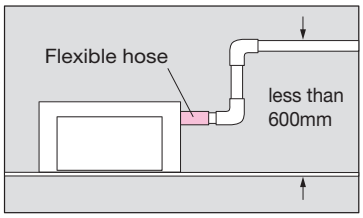
R410A

Point 1 Quiet, Lightweight & Compact

The FDU71 noise level is only 37dB on low fan. Weight is only 40kg and height 297mm. The indoor unit is concealed in the ceiling making it the ideal choice for homes and commercial premises.

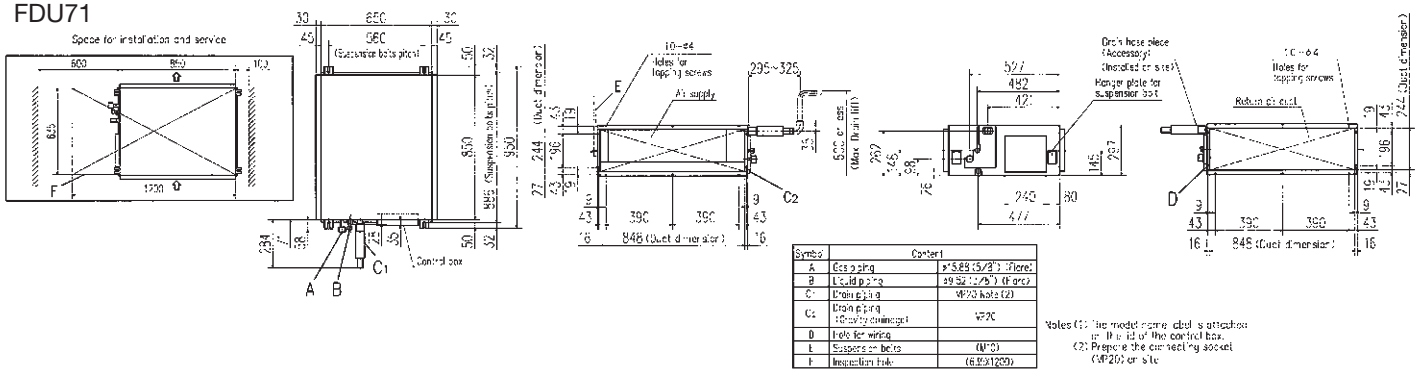
Point 2 600mm Drain Pump

Drain can be discharged upwards by 600mm from the ceiling surface. It allows a piping layout with a high degree of freedom depending on the installation location.



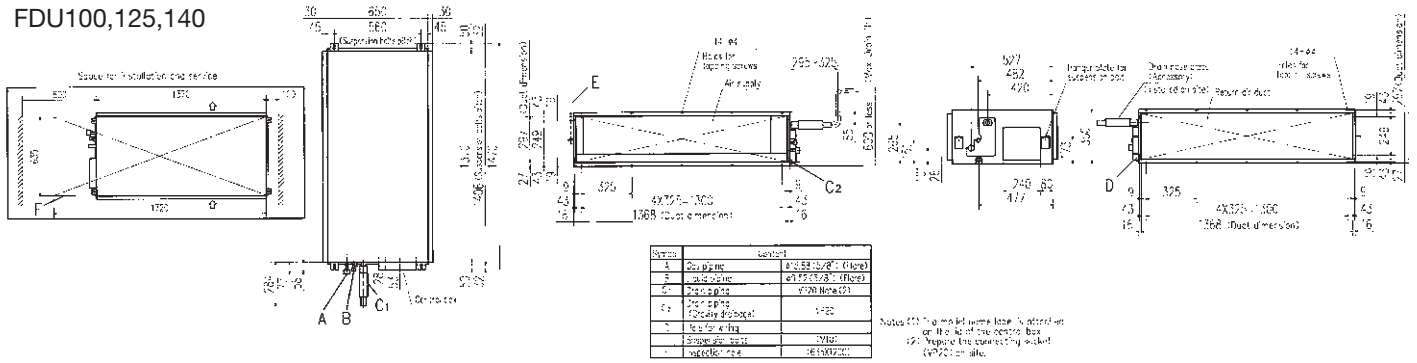
Outline drawing (Unit:mm)

FDU71



Symbol	Content
A	Gas piping
B	Liquid piping
C1	Drain piping
C2	Drain piping (Cranky connection)
D	Hole for wiring
E	Suspension bolts
F	Inspection hole

FDU100,125,140



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RCH-E3
(Option)

RC-E4
(Option)

RCN-KIT3-E

FDU Series			FDU71VNXVD / FDU71VD / FDC71VNX	FDU100VNVD / FDU100VD / FDC100VN*	FDU125VNXVD / FDU125VD / FDC125VNX	FDU140VNXVD / FDU140VD / FDC140VNX
Power supply	Outdoor Unit		1 Phase 230V 50Hz			
Capacity	Cooling T1	kW	7.1 [3.2~8.0]	10.0 [4.0~11.2]	12.5 [5.0~14.0]	14.0 [5.0~16.0]
	Heating H1	kW	8.0 [3.6~9.0]	11.2 [4.0~12.5]	14.0 [4.0~17.0]	16.0 [4.0~18.0]
	Heating H2	kW	6.9	8.5	14.3	14.4
Input	Cooling T1	kW	2.15	2.88	3.44	4.20
	Heating H1	kW	2.15	2.99	3.67	4.30
EER	Cooling T1		3.3	3.47	3.63	3.33
COP	Heating H1		3.72	3.74	3.81	3.72
Current	Cooling T1	A	9.6	12.7	15.3	18.6
	Heating H1	A	9.5	13.1	16.3	19.1
Rec Circuit Breaker		A	20	32		
Sound pressure level (JIS C9612)	Indoor	dB	Hi 41 Lo 37	Hi 42 Lo 37	Hi 43 Lo 38	Hi 43 Lo 38
	Outdoor	dB	51	49	50	52
Sound Power			66	70	70	72
Airflow	Indoor	l/s	Hi 333 Lo 283	Hi 566 Lo 450	Hi 700 Lo 558	
External Static Pressure	Indoor	Pa	60/130 @ 333 l/S	60/130 @ 566 l/S	60/130 @ 700 l/S	
External dimensions (HXWXD)	Indoor	mm	297 × 850 × 650	350 × 1370 × 650		
	Outdoor	mm	750 × 880 (+88) × 340	845 × 970 × 370	1300 × 970 × 370	
Net weight	Indoor	kg	40	63		
	Outdoor	kg	60	81	105	
Refrigerant piping	Liquid line	mm	9.52			
	Gas line	mm	15.88			
	Connection method		Flare			
Refrigerant R410A	Pre-charged Amount	kg	2.95	3.8	4.5	
		m	30			
Maximum Piping Length	One way	m	50		100	
Return & Supply Air Connection	Flange	mm	244 x 848	297 x 1368		
Controller			RC-E4 or RCN-KIT3-E			

*Micro

For additional information please reference 10.PAC.DB.142A & 10.PAC.DB.136A

Sound pressure level indicates the value in an anechoic chamber

FDUM Series

HyperInverter

R410A

Point 1 Adaptable

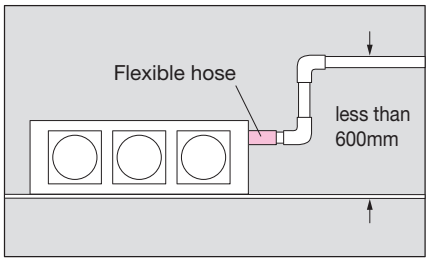
Selectable static pressure and flexible duct design with selectable air suction (direct suction /duct suction) can meet a wide range of installations.

Static pressure Pa

model	Standard	Max
FDUM50&60V/VD	50	85

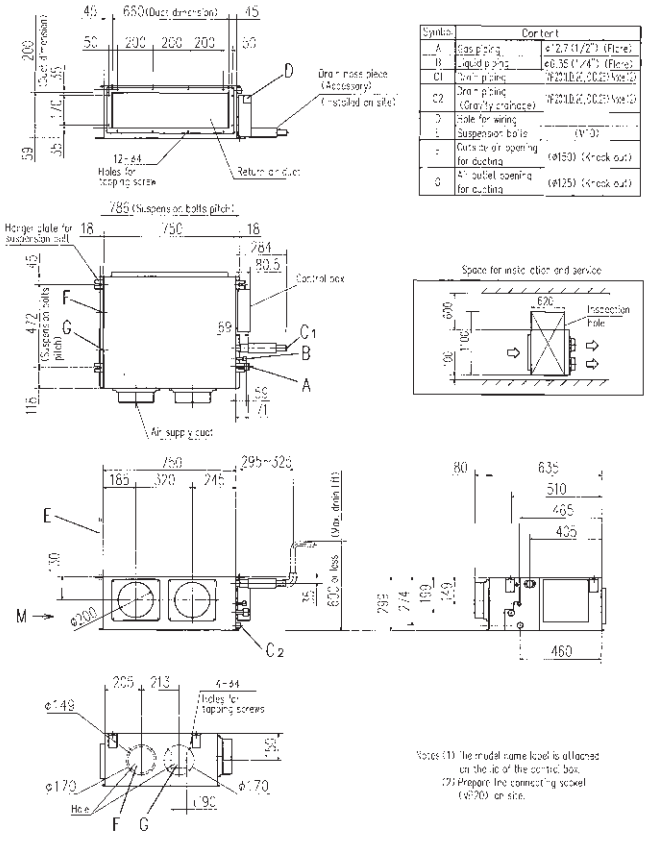
Point 2 600mm Drain Pump

Drain can be discharged upwards by 600mm from the ceiling surface. It allows a piping layout with a high degree of freedom depending on the installation location.

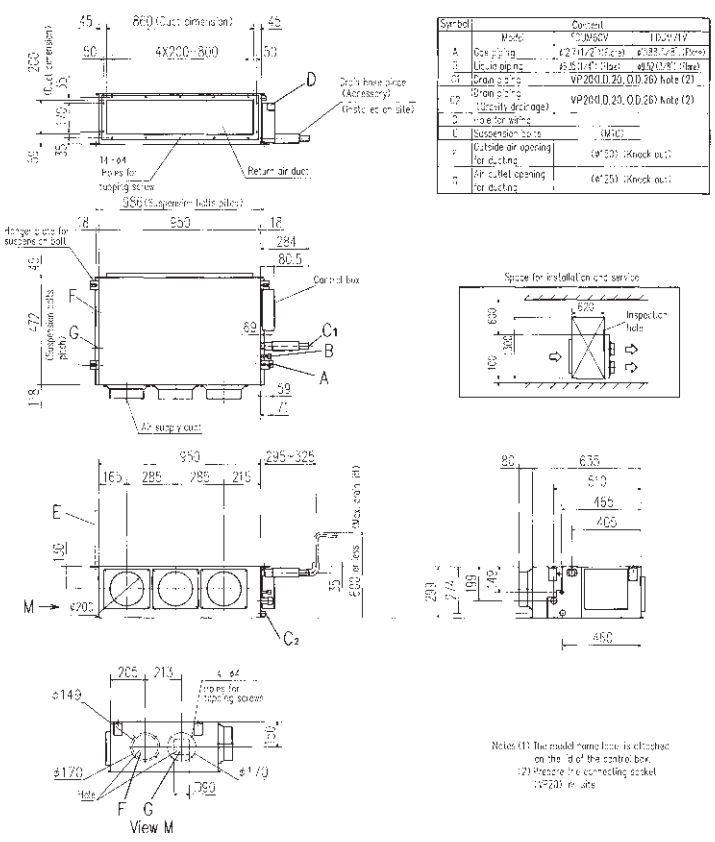


Outline drawing(Unit:mm)

Model FDUM50


650(Duct dimension)
Drain hose piece (Accessory) (Installed on site)
Return air duct
Holes for tapping screw
Hanger plate for suspension bolt
Control box
Air supply duct
Space for installation and service
Inspection hole
Notes (1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20) on site.
View M

Models FDUM60


650(Duct dimension)
4X200~800
Drain hose piece (Accessory) (Installed on site)
Return air duct
Holes for tapping screw
Hanger plate for suspension bolt
Control box
Air supply duct
Space for installation and service
Inspection hole
Notes (1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20) on site.
View M

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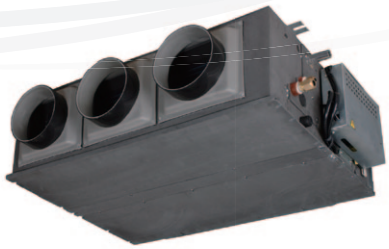
RCH-E3
(Option)

RC-E4
(Option)

RCN-KIT3-E



FDUM Series			FDUM50ZIXVD	FDUM60ZIXVD
			FDUM50VD	FDUM60VD
			SRC50ZIX-S	SRC60ZIX-S
Power supply	Outdoor Unit		1 Phase 230V 50Hz	
Capacity	Cooling T1	kW	5.0 [2.2~5.6]	5.6 [2.8~6.3]
	Heating H1	kW	5.4 [2.5~6.3]	6.7 [3.1~7.1]
	Heating H2	kW	5.0	6.2
Input	Cooling T1	kW	1.52	1.86
	Heating H1	kW	1.41	1.96
EER	Cooling T1		3.29	3.01
COP	Heating H1		3.82	3.42
Current	Cooling T1	A	6.7	8.2
	Heating H1	A	6.3	9.0
Rec Circuit Breaker		A	16	
Sound pressure level (JIS C9612)	Indoor	dB	P-Hi 35 Hi 34 Me 31 Lo 28	P-Hi 38 Hi 34 Me 31 Lo 28
	Outdoor	dB	47	48
Sound Power			62	65
Airflow	Indoor	l/s	P-Hi 233 Hi 216 Me 200 Lo 183	P-Hi 300 Hi 266 Me 250 Lo 233
External Static Pressure	Indoor	Pa	85 @ 233 l/s	85 @ 300 l/s
External dimensions (HXWXD)	Indoor	mm	299 × 750 × 635	299 × 950 × 635
	Outdoor	mm	640 × 800 × 290	
Net weight	Indoor	kg	34	40
	Outdoor	kg	43	
Refrigerant piping	Liquid line	mm	6.35	
	Gas line	mm	12.7	
	Connection method		Flare	
Refrigerant R410A	Pre-charged Amount	kg	1.4	
		m	15	
Maximum Piping Length	One way	m	30	
Supply Air Connection		mm	2 x Ø200	3 x Ø200
Return Air Connection		mm	200 x 660	200 x 860
Controller			RC-E4 or RCN-KIT3-E	

For additional information please reference 10.PAC.DB.142A & 10.PAC.DB.136A

Sound pressure level indicates the value in an anechoic chamber

Before starting use

Heating performance
The heating performance values (kW) described in catalog are the values obtained by operating at an outdoor temperature of 7C and indoor temperature of 20C as set forth in the ISO Standards. As the heating performance decreases as the outdoor temperature drops, if the outdoor temperature is too low and the heating performance is insufficient, use other heating appliances as well.

Indication of sound values
The sound values are the values (A scale) measured in a chamber such as an anechoic chamber following the ISO Standards. In the actual installation state, the value is normally larger than the values given in the catalog due to the effect of surrounding noise and echo. Take this into consideration when installing.

Use in oil atmosphere
Avoid installing this unit in as atmosphere where oil scatters or builds up, such as in a kitchen or machine factory.
If the oil adheres to the heat exchanger, the heat exchanging performance will drop, mist may be generated, and the synthetic resin parts may deform and break.

Use in acidic or alkaline atmosphere
If this unit is used in acidic atmosphere such as hot spring areas having high level of sulfuric gases or in alkaline atmosphere including ammonia or calcium chloride, places where the exhaust of the heat exchanger is sucked in, or at coastal areas where the unit is subject to salt breezes, the outer plate or heat exchanger, etc., will corrode. Please ask a dealer or specialist when you use an air conditioner in places differing from a general atmosphere.

Use in places with high ceilings
If the ceiling is high, install a circulator to improve the heat and air flow distribution when heating.

Refrigerant leakage
The refrigerant (R410A) used for Air conditioner is non-toxic and nonflammable in its original state.
However, in consideration of a state where the refrigerant leaks into the room, measures against refrigerant leaks must be taken in small rooms where the tolerable level could be exceeded. Take measures by installing ventilation devices, etc.

Use in snowy areas
Take the following measures when installing the outdoor unit in snowy areas.

Snow prevention
Install a snow-prevention hood so that the snow does not obstruct the air intake port or enter and freeze in the outdoor unit.

Snow piling
In areas with heavy snow fall, the piled snow could block the air intake port. In this case, a frame that is 50cm or higher than the estimated snow fall must be installed underneath the outdoor unit.

Automatic defrosting device
If the temperature is low, and the humidity is high, frost will stick to the heat exchanger of the outdoor unit. If use is continued, the heating performance will drop.
The “Automatic defrosting device” will function to remove this frost.
After heating for approx, three to ten minutes, it will stop, and the frost will be removed. After defrosting, hot air will be blown again.

Servicing the air-conditioner
After the air-conditioner is used for several seasons, dirt will build up in the air-conditioner causing the performance to drop. In addition to regular servicing, we recommend the maintenance contract (charged for) by a specialist.

⚠ Safety Precautions

Air-conditioner usage target
The air-conditioner described in this catalog is a dedicated cooling/heating device for human use.
Do not use it for special applications such as the storage of foodstuffs, animals or plants, computer server rooms, precision devices or valuable art, etc.
This could cause the quality of the items to drop, etc.
Do not use this for cooling vehicles or ships. Water leakage or current leaks could occur.

Before use
Always read the “User,s Manual” thoroughly before starting use.

Installation
Always commission the installation to a dealer or specialist. Improper installation will lead to water leakage, electric shocks and fires.
Make sure that the outdoor unit is stable in installation. Fix the unit to stable base.

Usage place
Do not install in places where combustible gas could leak or where there are sparks.
Installation in a place where combustible gas could be generated, flow or accumulate, or places containing carbon fibers could lead to fires.

Only persons that are qualified and licensed are permitted to install and service products that contain refrigerants in Australia, go to www.arctick.org.
Suitable access for service must be provided in compliance with industry standards and local regulations.

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ISO9001
Our Air Conditioning & Refrigeration Systems Headquarters is an ISO9001 approved factory for residential air conditioners and commercial-use air conditioners (including heat pumps).

BIWAJIMA PLANT
Mitsubishi Heavy Industries, Ltd.
Air-conditioning & Refrigeration Systems Headquarters
Certified ISO 9001
Certificate number : JQA-0709

MITSUBISHI HEAVY INDUSTRIES-MAHAJAK AIR CONDITIONERS CO., LTD.
Certified ISO 9001
Certificate Number : 04100 1998 0813

ISO14001
Our Air Conditioning & Refrigeration Systems Headquarters has been assessed and found to comply with the requirements of ISO14001.

BIWAJIMA PLANT
Mitsubishi Heavy Industries, Ltd.
Air-conditioning & Refrigeration Systems Headquarters
Certified ISO 14001
Certificate number : JQA-EM0256

MITSUBISHI HEAVY INDUSTRIES-MAHAJAK AIR CONDITIONERS CO.,LTD.
Certificate Number : 04104 1998 0813 E5

FIVE YEAR WARRANTY 5/5/5 PARTS • LABOUR • COMPRESSOR

MHIAA216_FDU Ducted 8PP 022011

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